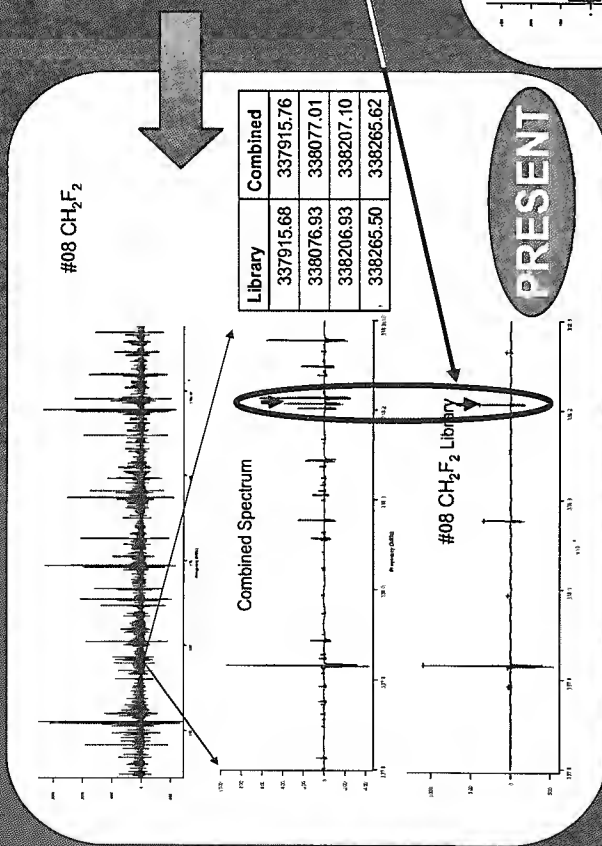


Figure 1

- Matching lines with the proper intensities:

**SPECIES IS PRESENT**

*A perfect match--  
even in clutter*



- Non-matching lines:

**SPECIES IS NOT PRESENT**

*A very obvious instance*

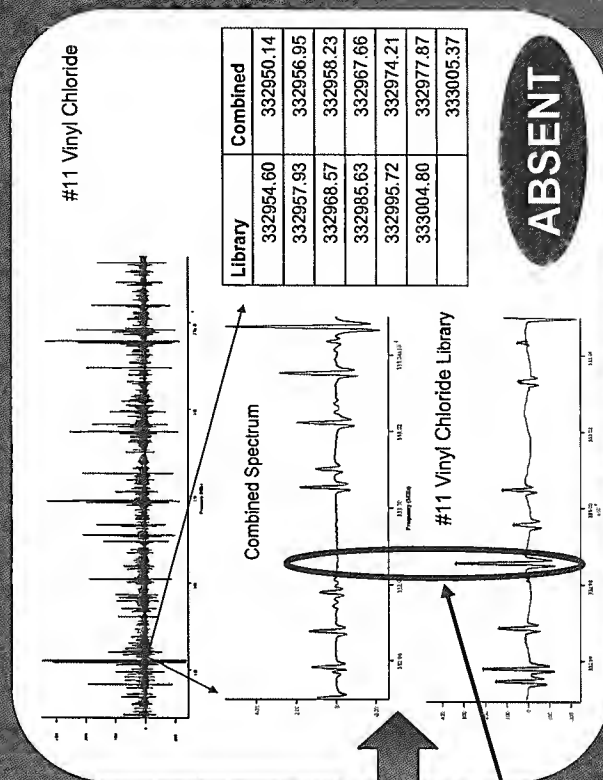


Figure 4

# Integrated Tactical Airborne Remote Chemical Spectrometer (ITARCS)

## THz Flight Module Subsystem

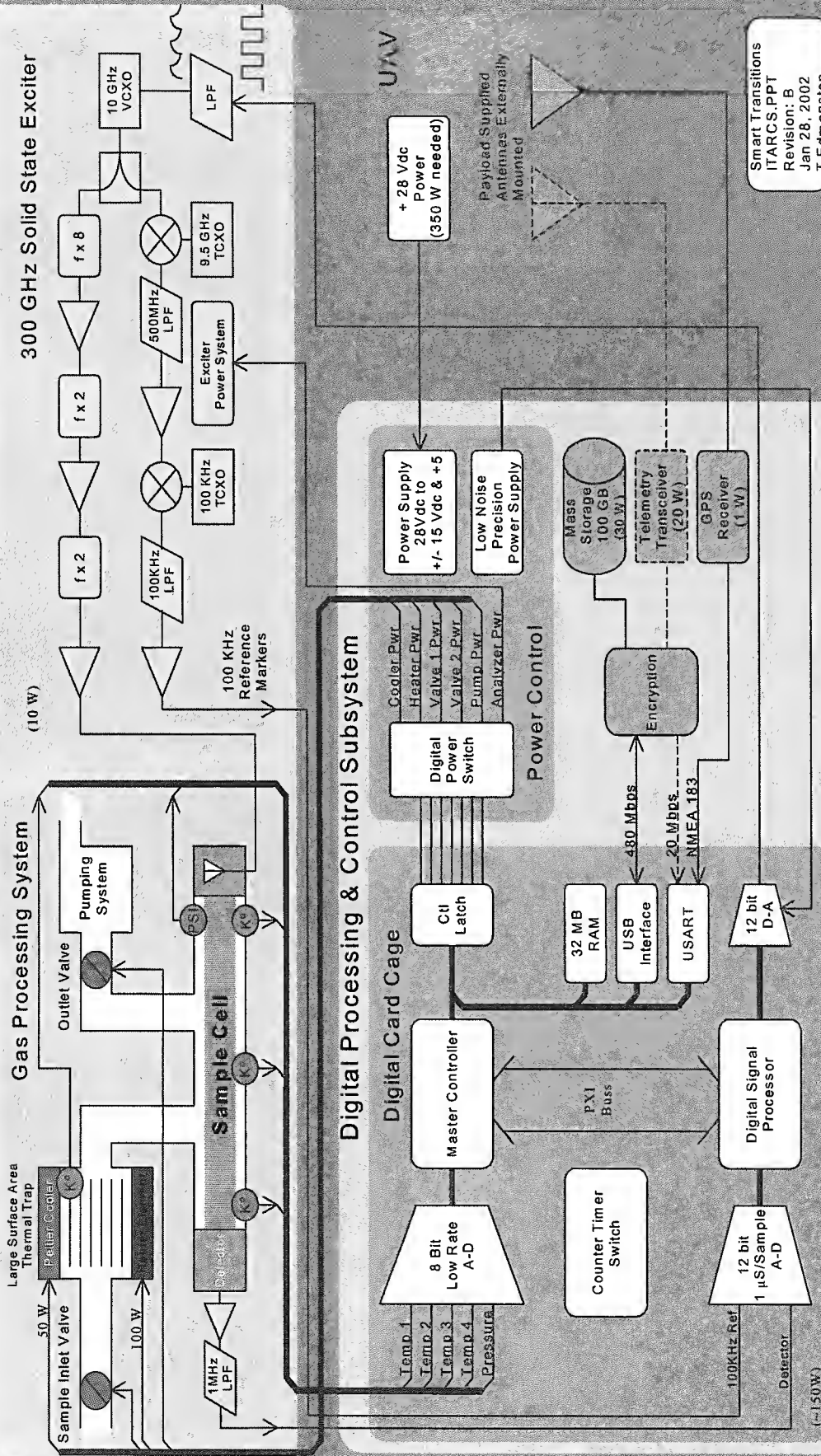
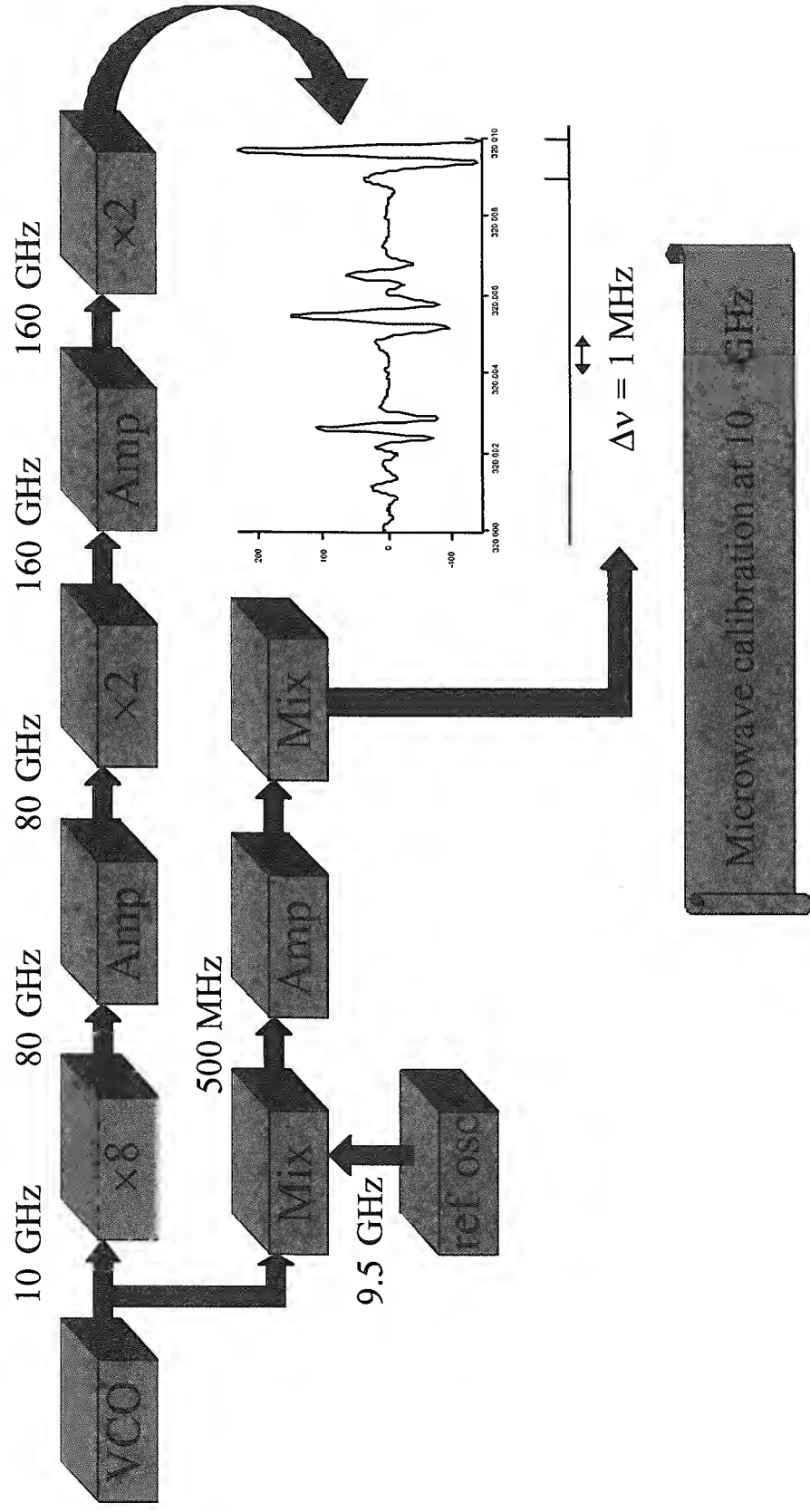
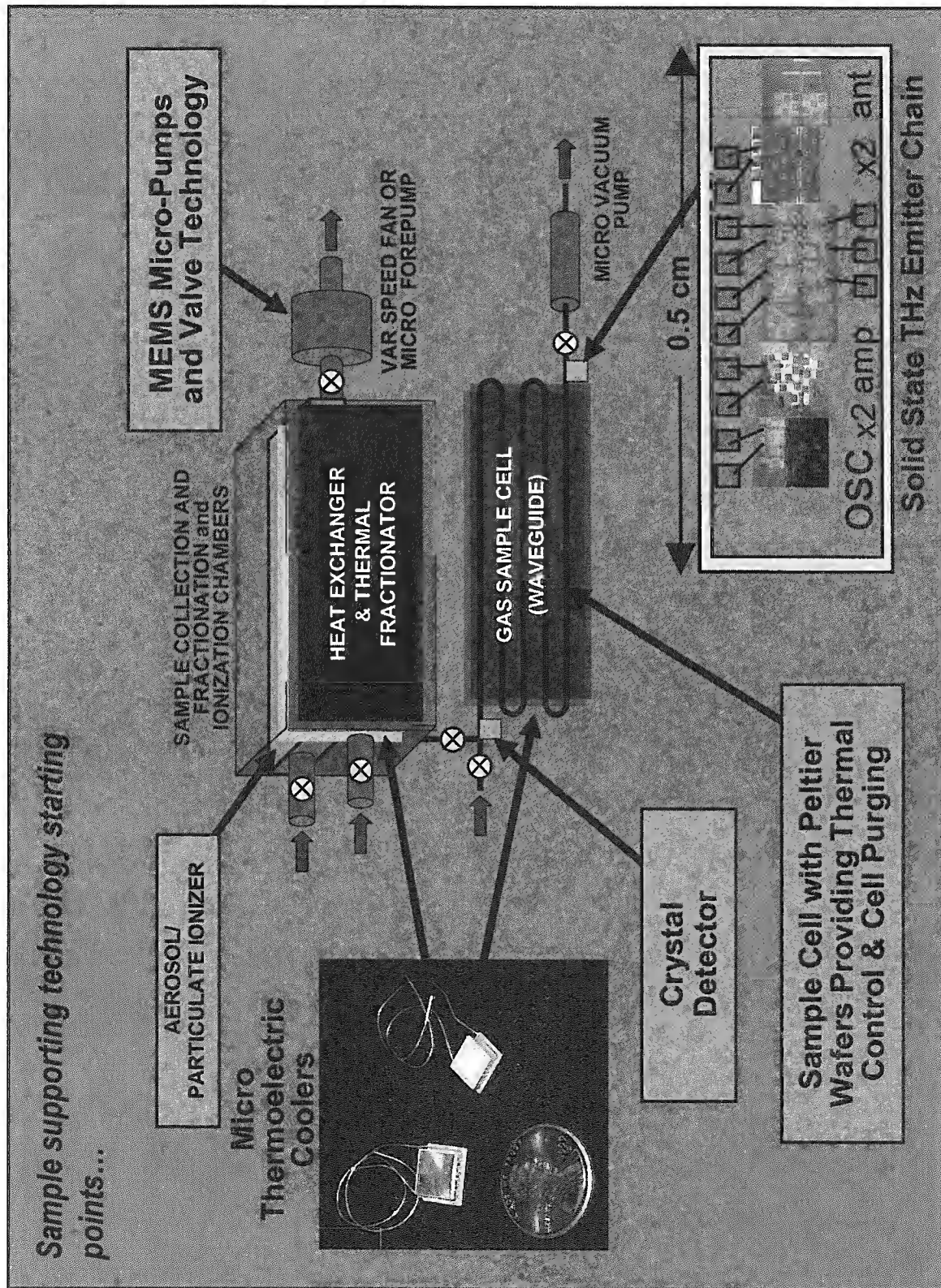


Figure 5

# Amplifier Based 330 GHz Source







**Figure 7**

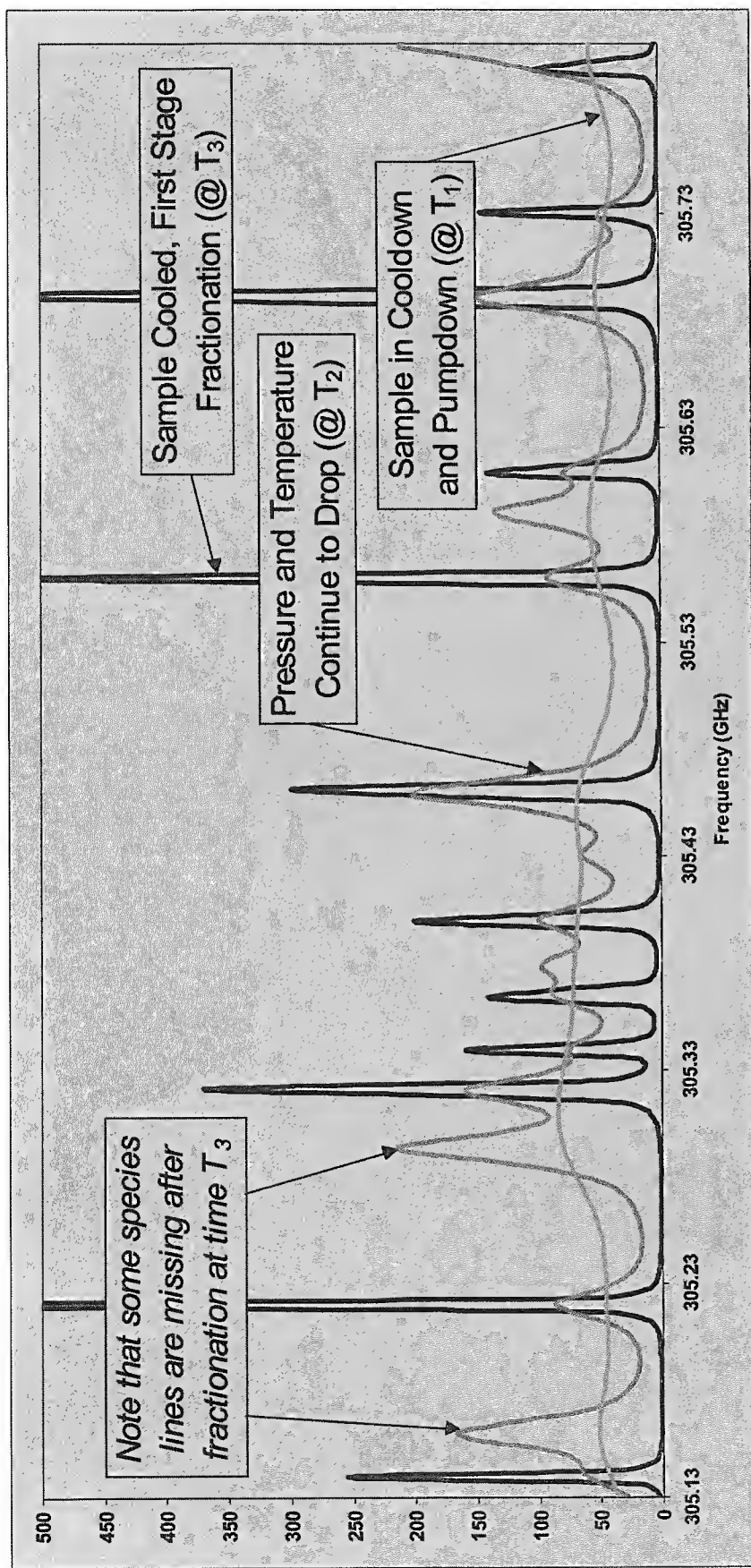


Figure 8

## How the MACS System Works

Start the process with ingestion of sample (green segment) and enter the fractionation loop (blue) for N-processing stages; then wrap up the sample process by entering the red segment.

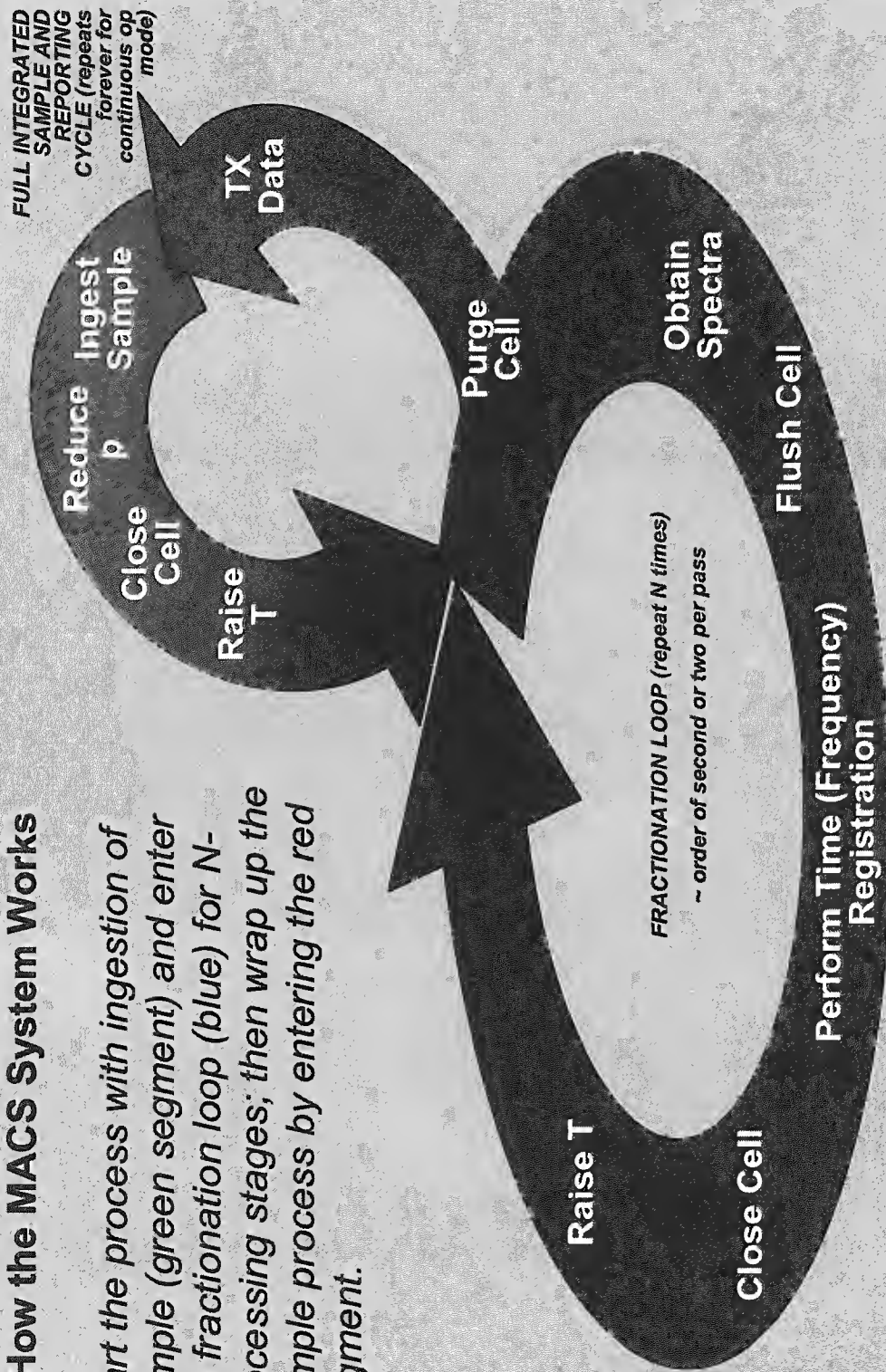


Figure 9



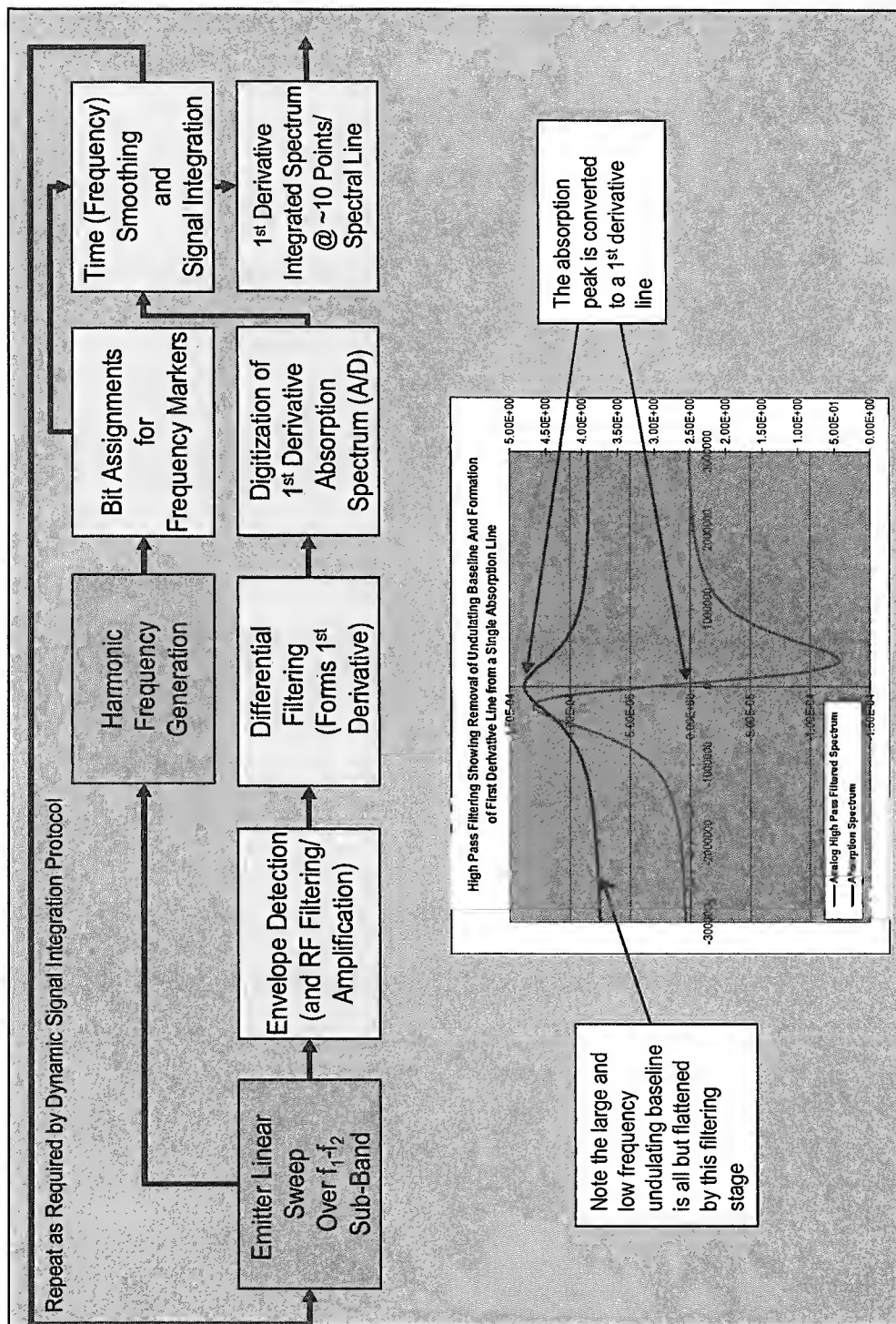


Figure 10 A



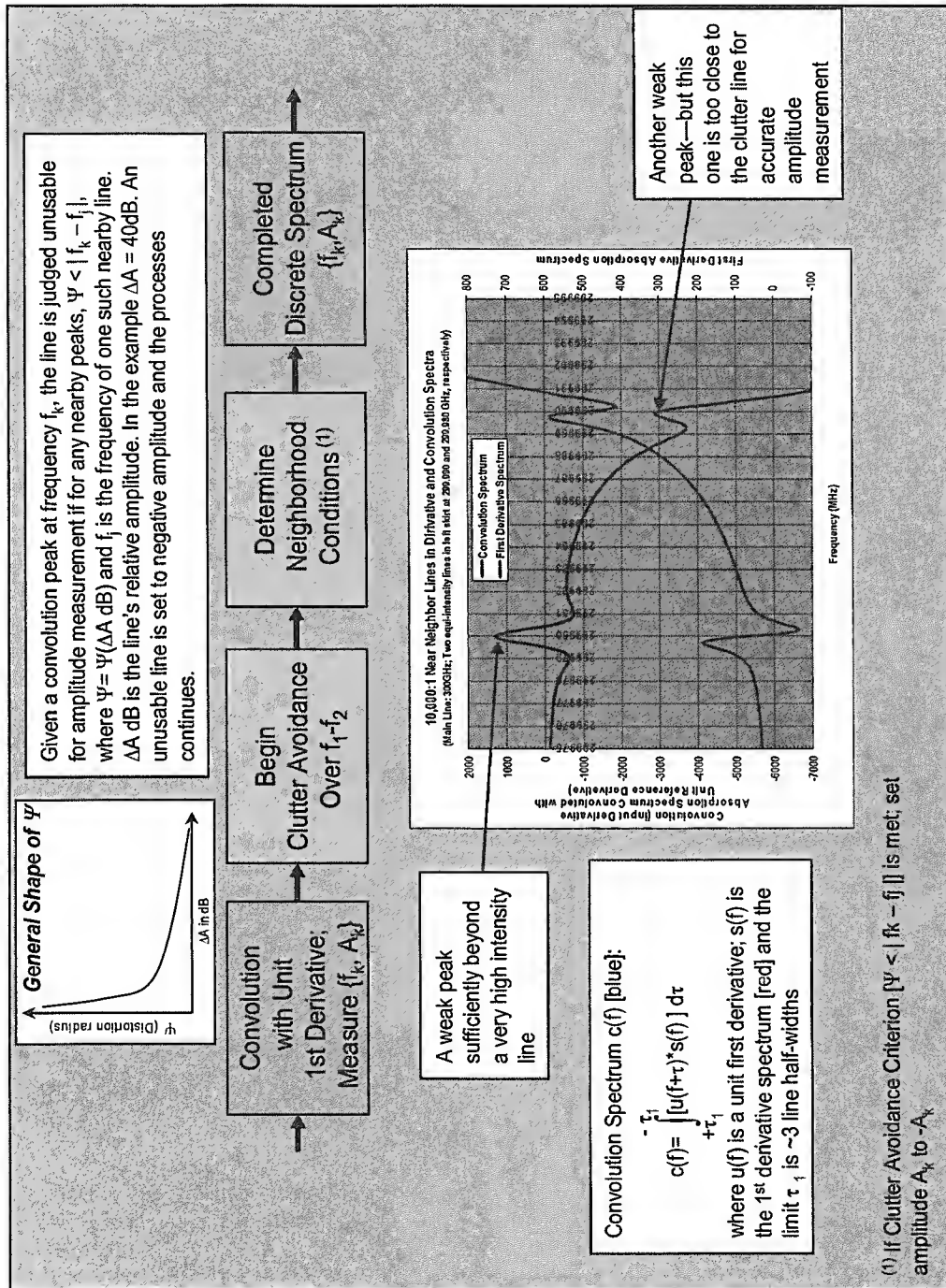


Figure 10 B

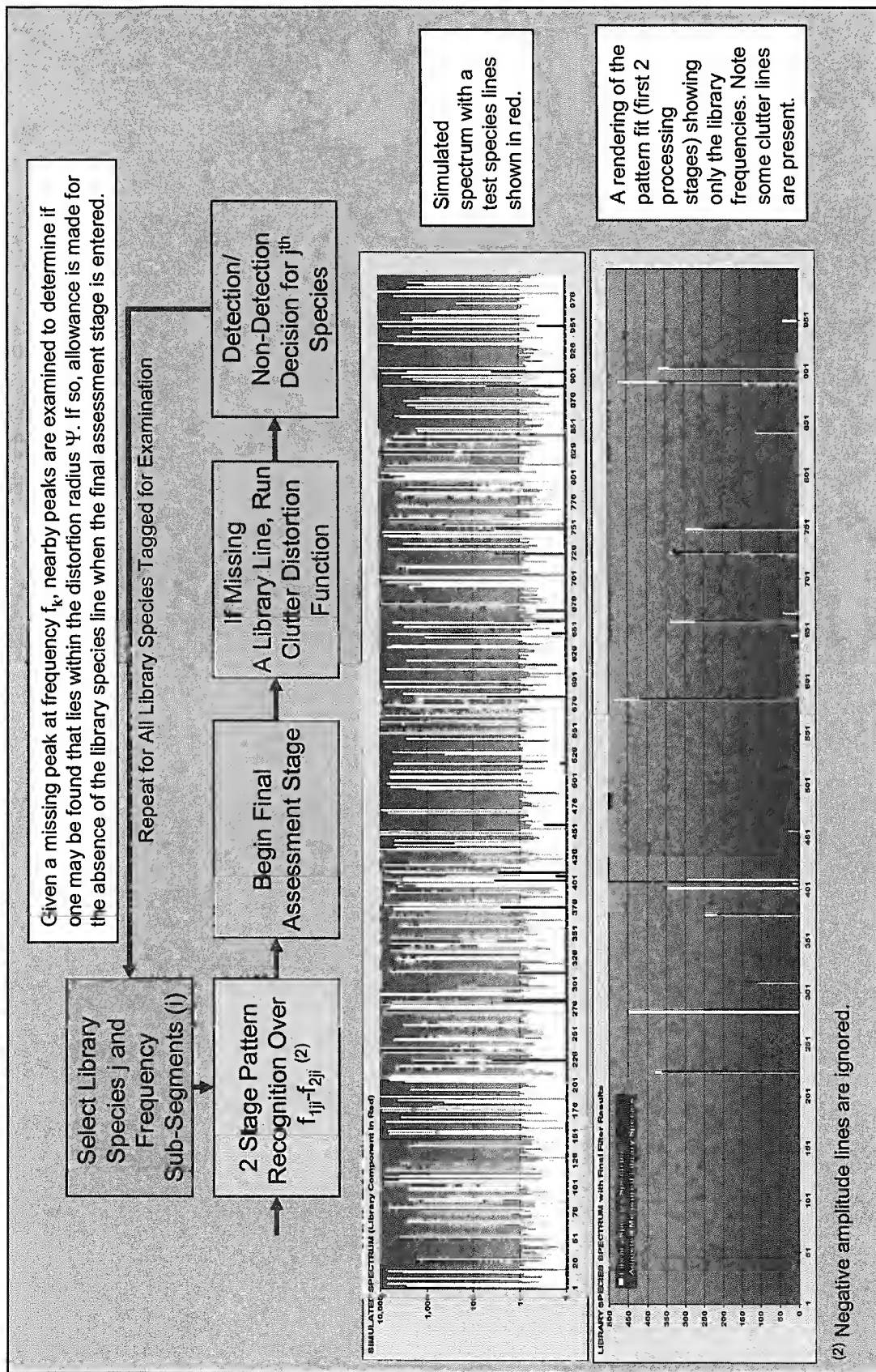


Figure 10 C

## MACS Spectral Analysis ROC Examples

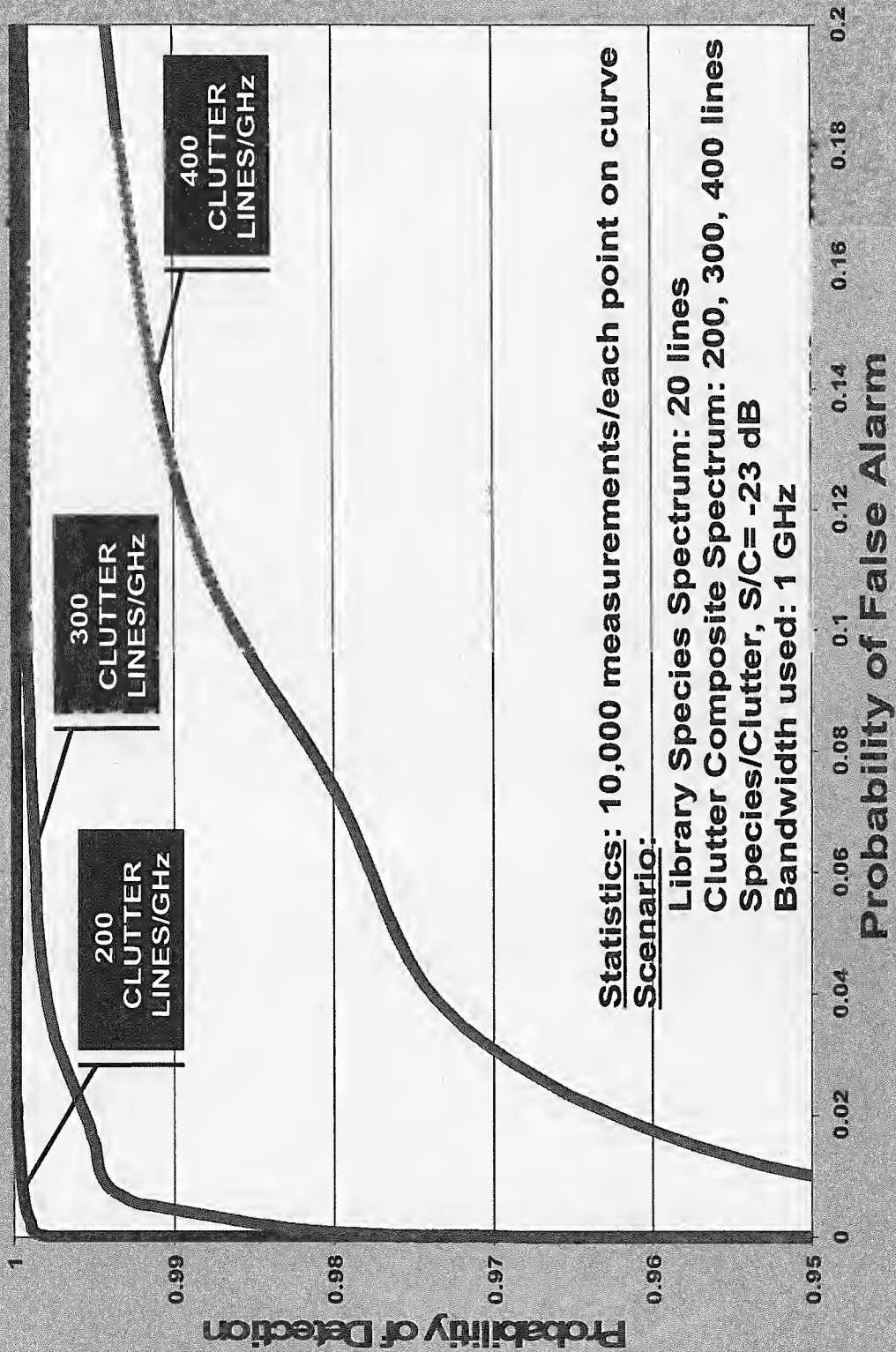


Figure 11